Report on
"The Ethnology of New Guinea"

by Professor Adolf Meyer
(Read by Doctor Paul Topinard)

ANTHROPOLOGY SOCIETY OF PARIS
Meeting of April 15, 1880

Robert K. Stevenson – Translator and Editor

Papuans of the Kerepunu tribe (New Guinea)

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Messieurs, the three molds that I have requested Doctor Topinard to display to the Anthropology society originate from a series of 135 Papuan skulls that I myself collected in 1873 in New Guinea and at Mysore Island in Geelvink Bay; I justifiably chose these three skulls from which to make the molds because these three deviate up to a certain point from the rest of the 132. They are 3 of the 4 out of 135 total skulls that Professor de Quatrefages and Doctor Hamy, in their *Crania ethnica* (pages 205+. 1876), have regarded as belonging to individuals of the Negrito-Papuan race: specifically, skull numbers 166, 70 and 97 with cephalic indexes of 80.2, 80.9 and 81.5 respectively, all three originating from Mysore Island. In my capacity as Director of the Natural History Museum of Dresden, I very much wish to give you, my French anthropology colleagues, the opportunity to examine at least the molds of these skulls that deviate from the series, so that you may be able to better judge if these skulls are so completely distinguishable from the rest, as the authors I just cited believe.

In a paper that I wrote three years ago on the 135 Papuan skulls (see *Mittheilungen des Kgl. Zoologischen Museum zu Dresden*, Vol. II, pp. 163-222, pl. VIII-X, 1877), I provided a table in which I arranged in order the entire series with respect to the cephalic index. Here is this table and its results:

Cephalic Index		
65.2	1 skull	
66.5 – 71.4	47 skulls	
71.6 – 73.4	36 skulls	(1 infant, 1 youth)
73.5 – 78.1	44 skulls	(4 infants, 6 youths)
78.9 – 80.2	5 skulls	(3 infants)
80.9 – 81.5	2 skulls	

The same series, with the results broken down in greater detail:

Cephalic Index	
65	1 skull
66	0 skull
67	5 skulls
68	5 skulls

69	5 skulls	
70	15 skulls	
71	17 skulls	
72	18 skulls	(1 youth)
73	18 skulls	(1 infant)
74	14 skulls	
75	7 skulls	(1 infant, 1 youth)
76	13 skulls	(1 infant, 2 youths)
77	6 skulls	(2 infants, 1 youth)
78	4 skulls	(2 youths)
79	2 skulls	(2 infants)
80	0 skull	
81	1 skull	(1 infant)
82	1 skull	

If one groups the skulls according to sex, and also excludes the infants and youths as well as the most defective and anomalous skulls, what remains is as follows:

54 Males

Cephalic Index	
66.5 – 71.4	18 skulls
71.6 – 73.4	19 skulls
73.7 – 77.8	15 skulls
80.2	1 skull
80.9	1 skull

32 Females

Cephalic Index	
66.6 – 71	17 skulls
71.8 – 73.4	7 skulls
73.5 – 76.4	8 skulls

(Skull number 97 was not included in this latter series because the skull is defective and also because I have been unable to determine its sex.)

I shall gladly subscribe to the opinion that there are properly so-called Negritos and that they are a race distinct to New Guinea if there were some reason to convince me of this. Such has not been the case up to now. A discussion of this question will lead me too far at present, but I wish on this occasion to be permitted to say a word about some remarks Doctor Lesson recently made in his book: *les Polynesiens* (Paris, 1880), remarks that relate to me and which also touch upon this question. I shall restrict myself to discussing an error of fact on the part of Doctor Lesson, who is unaware of my report on the Papuans for the year 1873 which made its appearance in 1874 in the *Revue d'anthropologie*.

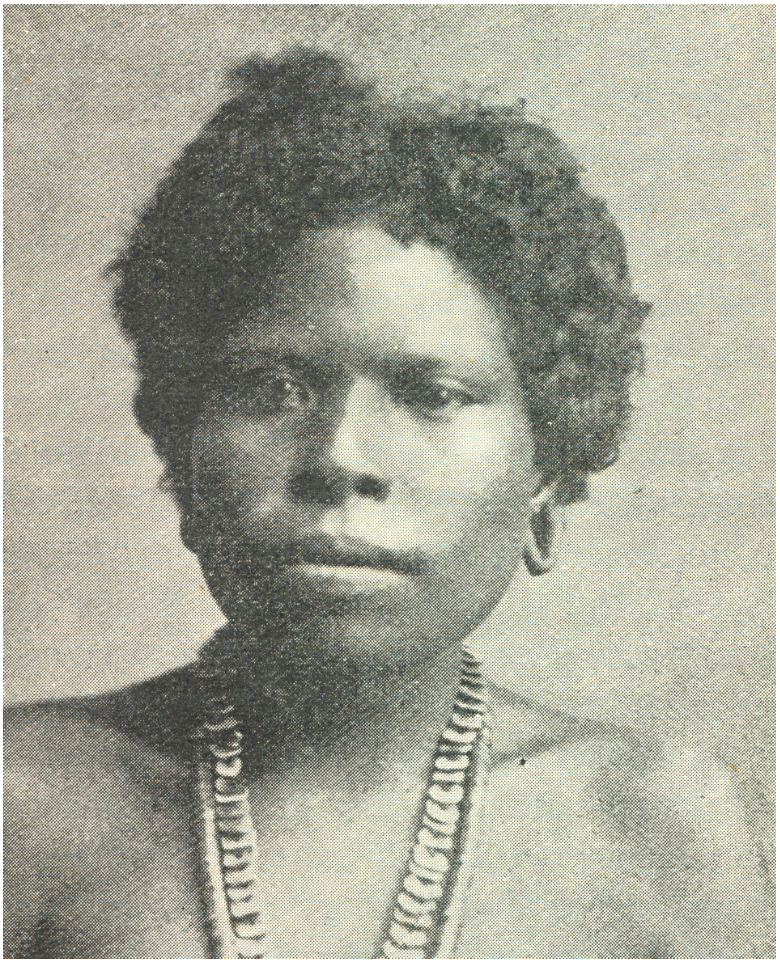
Doctor Lesson says on page 46 in his book this: “Quite recently the German journeyer Meyer asserted that the Arfakis do not differ constitutionally from the tribes that border the sea; this must be, he maintains, because without exception all the blacks of New Guinea, Malaysia, the Philippines, etc., are only formed from the varieties of a single race.”

The expression ***“this must be”*** gives the idea that I have treated these questions with a preconceived notion, or that I have done violence to the facts. In order to prove that the former is not the case, I shall quote a passage from a memorandum of mine that was published in 1873 in *Zeitschrift für Ethnologie* of Berlin (p. 45), concerning the similarities between the Negritos of the Philippines and the Papuans of New Guinea:

“It was in February, 1873 that Monsieur de Maclay and I joined up with each other at Tidore in the Moluccas, meeting up as well with the sultan and a company of about 60-80 Papuan men (who had just arrived directly from New Guinea). Monsieur de Maclay had come from Astrolabe Bay and had not yet been to the Philippines; it was just the opposite with me: I had come from these islands and had not yet been to New Guinea. We conversed about these 60-80 Papuans that we beheld and also about the connection of the Negrito and Papuan races. I asked Monsieur de Maclay what seemed to me a very important question—that is, if these Papuans (from the western part of New Guinea) strongly resembled the Papuans of Astrolabe Bay (inhabiting the eastern part of New Guinea). He affirmed that he was unable to discern any difference, and as for myself, I was able to verify the exterior conformity between the Negritos of the Philippines and these Papuans. This exterior conformity is very salient and it forces serious consideration of the hypothesis of the two races being closely connected, by reason of the relatively small distance between the two countries that they inhabit.” (Monsieur de Maclay than related how several years ago a small ship from the Sangi Islands had landed against its crew’s will in New Guinea, where I myself have seen some of these Sangi Islanders.)

This therefore is the actual observation in which I first presented my view about the intimate connection of these two races, and, as you can see, I did not entertain this question with any preconceived idea.

In order to substantiate also that I have not done violence to the facts, I shall restrict myself to citing the following passages of other observers and scholars, who are in accord with me, and who at the same time demonstrate that Doctor Lesson’s judgment “that I do not have to be trained to observe either exactly or scientifically” is not sufficiently well-founded.



Young woman of the Samarai, a Papuo-Melanesian
mixed race people inhabiting southeast New Guinea

Page 112 of *l'Anthropologie du voyage au pole sud et dans l'Oceanie sur les corvettes l'Astrolabe et la Zelee* (Paris, 1854) contains this observation: "These Papuans have been found to be very similar at all the points visited along the coast. . . The natives of New Guinea who inhabit the mountains located a short distance from the coast are called Harfours or Arfakis. According to diverse accounts, these mountain people, often at war with the coastal tribes, ***are not different with regard to anthropological qualities***. Explorers describe the two groups—the mountain and coastal tribes—as belonging to the same race."

On page 119 of this same book we read the following: "A great homogeneity, certainly, prevails among all the inhabitants of New Guinea and the adjacent islands, and if there are distinctions that can be made, these distinctions can only be based on the most trifling differences. Malays frequently come to the islands located on the west side of the land of the

Papuans, such as Waigen Island, Rawak, etc., coming for beche-de-mer or for trading with the natives. These habitual relations have resulted in the generation of some mélanges, which have given rise to the Negro-Malay mixed race, first pointed out and described by Messieurs Quoy and Gaimard. ***These hybrids are sprinkled in small number amongst the Papuans; but, it would be extremely wrong to suppose that all Papuans belong to a mixed race***. Pritchard has cited to us the observations of Monsieur Earl who, having visited the northern part of New Guinea many times, asserts that ***there does not exist the slightest reason to consider the Papuans of this region as belonging to a hybrid race***. This traveler has, indeed, seen some half-breeds, but these differ a great deal from the veritable Papuans; they do not have, like the latter, woolly-tufted hair."

On page 263, Professor de Quatrefages and Doctor Hamy, in their *Crania ethnica* (Book 6, 1878), state: "Do the Alfuru Arfakis belong to a different race than their nearby neighbors of the coast, as Lesson and some others contend? . . . Ethnological studies demonstrate that throughout the Arfak mountain chain and in particular on the western summits, though Papuan negritos may sometimes be encountered, ***the immense majority of the mountaineers of this region, as verified by the heads which we have been able to procure, undoubtedly belong to the pure Papuan race***." (The description by Doctor Lesson of the Alfurus or, above all, of the Endamens, as he named them, in the vicinity of Doreh is in total contradiction with the descriptions given by his successors.)

Likewise, Monsieur de Maclay, who has visited so many places in New Guinea, is of the opinion that the mountaineers are of the same race as the inhabitants of the coast, which is just the opposite of Doctor Lesson's opinion.

I must remark that one is wrong to employ the name "Arfaki" as a general term pertaining only to the tribes of the Arfak Mountains. The inhabitants of the village of Andai, for example, residing at the foot of the mountain range, are Arfakis because they came from the mountains and have lived there only a few years. With them and also with the residents of Hassam, a village in the mountains, I have spent a few weeks (like other travelers before and after me have done); consequently, Doctor Lesson's comment "that it is probable that Meyer has never had occasion to observe the Arfakis closely" only shows how poorly informed he is and that he is not sufficiently acquainted with the writings of Messieurs Beccari, d'Albertis, de Rosenberg, and others.

Lastly, messieurs, throughout these parts of New guinea there are, besides the Arfakis, other mountain tribes, such as the Arfus to the northwest of Doreh, the Karons near Amberbaki, etc., etc.

DISCUSSION

Doctor ERNEST HAMY. I have reservations regarding the subject of Professor Meyer's communication, and I intend on writing him soon.

Doctor PAUL TOPINARD. I shall not enter into the question that gave rise to this letter of Professor Meyer. Rather, I shall only deal with drawing a lesson from the measurements obtained via diverse methods of the three skulls whose molds you behold today as well as from the measurements that I myself have procured with the assistance of Professor Meyer at the Natural History Museum of Dresden, where these skulls are deposited.

For starters, messieurs, I shall recall for you the circumstances that occasioned my taking these measurements and obtaining these molds for our museum. The three skulls which have been reproduced have acquired a certain celebrity thanks to the authors of *Crania ethnica*, who regard them as proof of the Negrito race's extension into the territory of New Guinea. They make up part of a collection of 135 Papuan skulls and were brought back from Mysore Island in Geelvink Bay (northern New Guinea) by Professor Meyer, who published their measurements and indexes in accordance with the ordering method that Doctor Broca discoursed upon here a few months ago. Here now are the measurements I obtained of the cephalic indexes of the 135 skulls; I have organized the list as a series of units, leaving out the decimals.

Cephalic Indexes	**Number of Cases**
65	1
66	3
67	6
68	5
69	8
70	13
71	19
72	19
73	20
74	9
75	6
76	12
77	5
78	3
79	3
80	2
81	1

This is a seriation as regular as one can find in any series of skulls: only the index of 76 repeats itself a little too much. The arithmetic mean is 72.8, and the range is 16.3; Cournot's probable measure extends from 71 to 73, inclusively. The extreme variations in the dolichocephalic sense drop down to 65 and 66, while the extreme variations in the brachycephalic sense go up to 80 and 81: all these values are rational.

The authors of *Crania ethnica*, however, believe that when one treats separately the last four cases—one at 79.9, two at 80, and one at 81—the average of 80.6 for these four that is obtained constitutes a significant number which, in their opinion, they accept as proof of the existence of brachycephalic blacks in the midst of the dolichocephalic blacks of New Guinea. I shall not debate here the merits of this treatment of the data, and for now only desire that we bear in mind Professor Meyer's published indexes.

These published indexes have, in fact, been obtained, not by the French method, but by a peculiar and little-used new method in Germany: the Ihering method. Last year, while traveling to Moscow, and happening to have in my bag a communication precisely regarding this unsatisfactory method, I visited the Museum of Dresden and immediately requested of its Director, Professor Meyer, permission to measure the 135 Papuan skulls according to our method; he eagerly granted me my request, and placed himself and his laboratory at my disposal.

What was behind my visit to Professor Meyer, given the interest that I have taken in these skulls, was the idea of making a mold of them and then having the molds sent to us. In his cover letter Professor Meyer says that these three skulls whose molds you behold distinguish themselves from the others by special qualities and he asks us for our opinion regarding them. I answered him by saying that in this case it is indispensable that we have in our hands one or two samples of the average type of the series. With the same promptness as before, Professor Meyer proceeded to make the molds of two skulls that occupy the very middle of the series by the ensemble of principal characteristics and measurements, and he also added a mold of each skull's cranial cavity. This constitutes the second shipment.

Let me return to my measurements. Here, messieurs, are the results for the four skulls possessing the highest cephalic index. The first table pertains to the Ihering method and is an extract of the numbers published by Professor Meyer. The second table contains the measurements that I myself have taken by following the usual method.

Ihering Method

Skull Number	Antero-Posterior Diameter	Transverse Diameter	Cephalic Index
148	173.5	138.5	79.8
166	172	138	81.5
97	162	132	81.4
70	181	146.5	80.9

Usual Method

Skull Number	Antero-Posterior Diameter	Transverse Diameter	Cephalic Index
148	170	136	80.0
166	178	136	76.4
97	164	128	78.0
70	180	134.5	74.7

The divergences between these two methods are considerable, as you can see, whether the absolute measures or the indexes are considered. The transverse diameter is always the largest by the Ihering method while the antero-posterior diameter is sometimes larger, two things that are easily comprehensible. For Skull Number 148 the correspondence between the two methods' measurements turns out by chance to be little modified, but for the other three skulls this correspondence is quite a different matter. This therefore is the result: for these latter three skulls the cephalic indexes are from 3 to 6 units larger by the Ihering method than are those obtained by the method that has the approval of the great majority of anthropologists in France, England, Italy, Russia, Germany, etc.; additionally, these three skulls, reputed to be brachycephalic, are in reality either mesaticephalic (with one, Number 97) or dolichocephalic (with the two others, Numbers 70 and 166). The conclusions, messieurs, I believe you can draw for yourselves. I must point out, though, one important caveat, which is that in craniology the greatest danger is to try to harmonize numbers obtained by different methods, as it only leads to the gravest illusions.

What I have said here of a critical nature apropos the Ihering method, which at the moment entertains the pretension of substituting itself for the current method, can be repeated with respect to the Welcker method, and I recommend that persons interested in seeing additional proof of the Ihering and Welcker methods' deficiencies review the craniology study on the Chinese race that appeared in the latest issue of *Revue d'anthropologie*. Certainly, there are other disagreements over ways of properly measuring certain elements of the cephalic index, such as the anterior end of the ophryon's antero-posterior diameter; but, the differences that result here are generally imperceptible. On the other hand, the confusion that the Ihering and Welcker methods lead to have deplorable consequences, and one cannot emphasize enough the harm and mischief that they are able to produce.

In a few words, here is the Ihering method, evidently conceived at some desk in an office and not in the laboratory. It requires that one take the principal diameters by the method of projections, and that one inscribe the skull in a cube, with the aid of six planes that are brought together within the instrument specifically invented for this task. But, the difficulty in allowing this principle, that is, in taking projections to part of the face and skull, is in not mixing up elements belonging to one or the other, and also in not eliminating entirely accidental certainties which, however, are foreign to the sought-for general conformation. Clearly, the inventor of this method and its instrument, both of which were realized on paper long ago before having been put into practice, did not at all foresee these problems.

Moreover, the first condition for taking any projection is to agree upon the plane or line of uniform orientation to adopt for the skull. And this is far from settled in Germany. Since the Congress of Göttingen, where attendees were reputedly well in agreement, the most diverse planes have been employed. In reality, one cannot reckon with the necessary precision the determination of this plane, and everyone ends up determining it pretty near to his taste and according to his own sentiment. Nevertheless, we find in books that planes of Baer, Camper, Lucae, and Merckel are treated. It is this last plane (Merckel's) that Monsieur Ihering has adopted for the orientation of the skull in the employment of his method; but, nothing in the construction of his instrument sets one to only think that he has intended this very exact orientation to be the premier condition of his method. The plane of Merckel, I remind you, runs from the auditory foramen to the lower border of the orbit.

I have, in fact, been desirous to see Monsieur Ihering's instrument operated not only under the hands of persons who have previously made use of it, but also to avail myself of it. I first established that, due to its very delicate handling, it should be employed with great care. Now, there is nothing that forecasts the orientation of the skull; it must therefore be oriented towards the averages. Next, one finds that the lateral planes, as they are brought together, meet each other at the zygomatic arches; also, by adding thin glass plates, whose thickness one then subtracts, the planes more precisely meet at the projection (called *Estonian*, as I remember from a discussion that some years ago took place in this room) of the extension of the zygomatic arch's beginning.

Here now, messieurs, are the results that Professor Meyer and I obtained on two of the preceding skulls by rigorously employing, and with scrupulous care, the Ihering method with Merckel's plane of orientation:

Skull Number	**Antero-Posterior Diameter**	**Transverse Diameter**	**Cephalic Index**
166	172	138	80.2
70	181	137	75.7

In comparing the above cephalic indexes with the ones that I obtained by means of the usual method, we find a one unit difference in the index for Skull Number 70 and a four unit difference for Skull Number 166; that is to say, this latter skull, originally brachycephalic, becomes dolichocephalic. What valid findings can one make with an instrument that yields such large individual mistakes?

Here now are the differences resulting from the employment of a mode of orientation that our esteemed colleague, Doctor Broca, prefers:

	Skull Number	**Antero-Posterior Diameter**	**Transverse Diameter**	**Cephalic Index**
(Merckel's plane)	70	181	137	75.7
(Broca's plane)	70	180	143.5	79.7

As you can see, messieurs, the cephalic index result shows a difference of four units, with the dolichocephalic skull becoming brachycephalic in this case (and it must always be such, because Ihering's system is unable to indicate very large transverse diameters).

I would love to retake these measurements myself, successively taking them by orienting the skulls in accordance with each of the proposed planes. I have begun attempting to verify them on these very same molds; however, as we know, plaster shrinks unequally, and so this approach does not yield any precise comparison.

Nonetheless, I expect that we shall be enlightened soon by Professor Meyer himself, whose sole desire is to discern the truth. He is the head of one of the finest museums of anthropology in Germany, and certainly has claim of having a personal opinion. After having measured his large series of Papuan skulls by the Ihering method and by that of Welcker, and having compared the results, Professor Meyer is now disposed to measuring them anew by the French method, as I have named it, but which is at present practiced everywhere. The results will be published in one of the forthcoming issues of *Revue d'anthropologie*.

All these divergent measurements springing from radically different methods, or of varying ways of employing the same method, clearly prove, I believe, what I have most wished to convey to you in my presentation today: that is, that the premier danger to avoid, when one brings in unfamiliar and foreign craniometric ideas, is to confound the numbers obtained by the diverse processes. Far from being useful to us, they can instead lead to the most regrettable illusions. Therefore, messieurs, I contend that adopting uniformity of a certain number of fundamental standards of measurement is today the foremost necessity of craniology.

Doctor PAUL BROCA. I completely share your opinion, Doctor Topinard, respecting the insufficiency of the orthogonal method (adopted by Monsieur Ihering to the exclusion of any other) and the enormous errors that can result; but, I thing that it is only by abbreviation that you have named the ordinary method *French*, which is in opposition to the Ihering method. No doubt you mean to say that the ordinary method is the one used in France. I must point out that it is also used everywhere else; it is the one that has been employed from the very beginning. Additionally, it is the first method devised that wishes to perceive the dimensions of the skull by having entirely natural recourse, and it will not be otherwise because this method entails one measuring directly the cranial lines by applying a compass upon their two endpoints. If therefore one sees fit to give a name, it should be called the *general method*, even though the choice of guiding-marks can make the results vary. It is in this manner that those wishing to determine the length of the skull sometimes measure the maximum antero-posterior diameter, sometimes the glabella-inion diameter, and so on; but all these approaches are similar in the sense that they have in view to directly measure on the skull the distance between two points or two parts of the skull. I shall add that these divergent approaches are tending more and more to disappear, and that researchers today are nearly unanimous in representing the skull's length by the line named *maximum antero-posterior diameter*.

In place of this, what is Monsieur Ihering's approach? He plots all the cranial lines in three cardinal planes: one plane being horizontal, another vertical, and the third transversal; he deems it unnecessary to measure the lines themselves, and it suffices him to measure their projections upon one of the principal planes. Also, according to him, the skull's length is not the antero-posterior diameter; instead, he maintains that it is the distance between the two perpendiculars dropped from the two endpoints of this diameter onto the horizontal plane. Now, this projection is always shorter than the diameter that it represents because, as we know, the latter is always oblique. The antero-posterior diameter’s inclination, in regard to the horizon, is, moreover, quite variable; it is often lower by 20 degrees, or sometimes it is elevated up to 33 degrees, and these variations depend very much less on the general architecture of the skull than on the particular conformation of the occiput.